

Patent Claims

1. An apparatus for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane, comprising at least a cracking furnace, a quench column and a purification facility in that order, wherein, in the feed line through which 1,2-dichloroethane is fed into the radiation zone of the cracking furnace, a predetermined pressure in the range of from 1.4 to 2.5 MPa is ensured and at least a first heat exchanger is arranged by means of which pressure fluctuations and temperature fluctuations in the EDC vaporization are compensated for.
2. An apparatus according to claim 1, in which a second heat exchanger, operated at least partly by the waste heat of the quench column, is additionally arranged in the feed line.
3. An apparatus according to claim 1 or claim 2, wherein a third heat exchanger, operated at least partly by the waste heat of the flue gases present in the convection zone of the cracking furnace, is additionally arranged in the feed line.
4. A process for the production of vinyl chloride by thermal cracking of 1,2-dichloroethane in a cracking furnace, in which a medium pressure of from 1.4 to 2.5 MPa is maintained in the system and an externally heatable and separately regulatable heat exchanger is provided by means of which pressure fluctuations and temperature fluctuations within the system can be compensated for.
5. A process according to claim 4, wherein a second heat exchanger brings the EDC to 120-150°C.
6. A process according to either claim 4 or claim 5, wherein the second heat exchanger in the EDC feed line serves to heat the EDC that is to be introduced into the first heat exchanger.
7. A process according to any one of claims 4 to 6, wherein a third heat exchanger heats the EDC to 200-250°C.

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8. A process according to any one of claims 4 to 7, wherein the pressure in the cracking coil in the radiation zone of the cracking furnace is from 1.6 to 2.2 MPa.
9. A process according to any one of claims 4 to 8, wherein the pressure in the cracking
5 coil in the radiation zone of the cracking furnace is from 1.8 to 2.1 MPa.
10. A process according to any one of the preceding claims 4 to 9, wherein the temperature in the cracking coil in the radiation zone of the cracking furnace is from 450 to 550°C.
11. A process according to any one of the preceding claims 4 to 10, in which the EDC is
0 introduced into the cracking furnace in gaseous form.
12. A process according to any one of the preceding claims 4 to 11, in which the EDC is
5 heated in the cracking furnace to at least 450°C within from 5 to 10 seconds.
13. A process according to any one of the preceding claims 4 to 12, in which the total
residence time of the EDC in the radiation zone of the cracking furnace is from 15 to
30 seconds.
14. A process according to any one of the preceding claims 4 to 13, in which the energy
10 supply to the cracking furnace is implemented in three burner row stages of which each
stage may comprise one or more burners, the first burner row stage, at the EDC entry,
providing from 30 to 70 %, the second, middle burner row stage providing from 20 to 40 %
and the third burner row stage, at the exit of the cracking gases, providing from 10 to 20 %.
15. A process according to any one of the preceding claims 4 to 14, in which the pressure
15 in the quench column is from 1.4 to 2 MPa.